What is claimed is:

1. A method for reducing NOx emissions in diesel engine exhaust, comprising:

determining at least one engine operating parameter for each of a plurality of engine operating conditions;

temporarily detecting respective NOx emissions at each of said engine operating conditions;

developing an injection strategy based on said at least one engine operating parameter at said respective operating condition and said respective detected NOx emissions;

controlling the injection of a reagent into the exhaust at a variable flow rate in order to reduce NOx emissions at said various operating conditions in accordance with said injection strategy;

wherein:

said variable flow rate of said reagent is controlled by a reagent injection controller in accordance with said injection strategy based on input of one or more of said engine operating parameters.

2. A method in accordance with claim 1, wherein said at least one engine operating parameter comprises at least one of fuel injection timing, exhaust temperature, RPM, load, engine speed, exhaust mass flow, cam position, crank angle position, or fuel injection signal.

3. A method in accordance with claim 1, wherein said reagent comprises one of an aqueous urea reagent, aqueous ammonia, anhydrous ammonia, or a hydrocarbon based reagent.

4. A method in accordance with claim 1, wherein said injection strategy is developed automatically by one or more algorithms in the reagent injection controller.

5. A method in accordance with claim 1, wherein said injection strategy is developed by post-processing the detected Nox emissions and the at least one engine operating parameter.

6. A method in accordance with claim 5, wherein said injection strategy is downloaded to the reagent injection controller.

7. A method in accordance with claim 1, wherein said injection strategy is provided in the form of multiple injection maps.

8. A method in accordance with claim 7, wherein said multiple injection maps are provided in lookup tables at said reagent injection controller.

9. A method in accordance with claim 1, wherein said engine operating conditions are generated on a dynamometer.

10. A method in accordance with claim 1, wherein said engine operating conditions are generated by normal operation of a vehicle.

11. A method in accordance with claim 10, further comprising:

specifying particular drive cycles of said vehicle to generate said plurality of engine operating conditions.

12. A method in accordance with claim 10, further comprising:

identifying operating voids in said plurality of engine operating conditions;

specifying particular drive cycles to obtain engine operating conditions corresponding to said voids.

13. A method in accordance with claim 1, further comprising:

providing at least one SCR catalyst bed in an exhaust system having selective catalytic reduction properties to enable conversion of said Nox emissions into water, nitrogen and carbon dioxide after interaction with said reagent.

14. A method in accordance with claim 13, wherein said SCR catalyst bed comprises at least one of titanium oxide, vanadium, molybdenum, tungsten oxide, or zeolite.

15. A method in accordance with claim 1, wherein:

said NOx is temporarily detected by a temporary NOx detector; and

said temporary NOx detector is removed after the injection strategy is developed.

16. A method in accordance with claim 1, wherein said NOx is detected by a NOx meter temporarily located external to the exhaust system.

17. A method in accordance with claim 1, wherein said NOx is detected by a NOx sensor temporarily installed within the exhaust system.

18. A system for reducing NOx emissions in diesel engine exhaust, comprising:

an engine control unit for determining at least one engine operating parameter for each of a plurality of engine operating conditions;

a temporary NOx detector for detecting respective NOx emissions of the exhaust at each of said engine operating conditions;

a reagent injection controller for implementing an injection strategy developed based on said at least one engine operating parameter at said respective operating condition and said respective detected NOx emissions;

a reagent tank for storing a reagent;

a delivery module for delivering the reagent from the reagent tank;

an exhaust system having a catalyst;

an injector module for receiving the reagent from the delivery module and injecting the reagent into said exhaust system at a variable flow rate in response to signals received from the reagent injection controller in order to reduce NOx emissions at said various operating conditions in accordance with said injection strategy;

wherein:

said variable flow rate of said injector module is controlled by said reagent injection controller in accordance with said injection strategy based on input of one or more of said engine operating parameters.

19. A system in accordance with claim 18, wherein said at least one engine operating parameter comprises at least one of

fuel injection timing, exhaust temperature, RPM, load, engine speed, exhaust mass flow, cam position, crank angle position, or fuel injection signal.

20. A system in accordance with claim 18, wherein said reagent comprises one of an aqueous urea reagent, aqueous ammonia, anhydrous ammonia, or a hydrocarbon based reagent.

21. A system in accordance with claim 18, wherein said injection strategy is developed automatically by one or more algorithms in the reagent injection controller.

22. A system in accordance with claim 18, wherein said injection strategy is developed by post-processing the detected NOx emissions and the at least one engine operating parameter.

23. A system in accordance with claim 22, wherein said injection strategy is downloaded to the reagent injection controller.

24. A system in accordance with claim 18, wherein said injection strategy is provided in the form of multiple injection maps.

25. A system in accordance with claim 24, wherein said multiple injection maps are provided in lookup tables at said reagent injection controller.

26. A system in accordance with claim 18, wherein said engine operating conditions are generated on a dynamometer.

27. A system in accordance with claim 18, wherein said engine operating conditions are generated by normal operation of a vehicle.

28. A system in accordance with claim 27, wherein:

the vehicle is operated through particular drive cycles to generate said plurality of engine operating conditions.

29. A system in accordance with claim 27, wherein:

operating voids in said plurality of engine operating conditions are identified;

particular drive cycles are specified to obtain engine operating conditions corresponding to said voids.

30. A system in accordance with claim 18, further comprising:

said catalyst comprises at least one SCR catalyst bed having selective catalytic reduction properties to enable conversion of said NOx emissions into water, nitrogen and carbon dioxide after interaction with said reagent.

31. A system in accordance with claim 30, wherein said SCR catalyst bed comprises at least one of titanium oxide, vanadium, molybdenum, tungsten oxide, or zeolite.

32. A system in accordance with claim 18, wherein said temporary NOx detector is removed after the injection strategy is implemented at said reagent injection controller.

33. A system in accordance with claim 18, wherein said NOx detector comprises a NOx meter temporarily located external to the exhaust system.

34. A system in accordance with claim 18, wherein said NOx detector comprises a NOx sensor temporarily installed within the exhaust system.